

1-24-13

# USING PROPORTIONS TO SOLVE CUSTOMARY MEASUREMENT CONVERSIONS

STEPS:

- ① Write the 1<sup>st</sup> ratio as the FACT (relationship) of the 2 units
- ② Write the 2<sup>nd</sup> ratio w/ a variable (unknown #) in the same order as Step 1
- ③ Solve the proportion using "heart method"

**FACTS**

Length:

$$12 \text{ in.} = 1 \text{ ft.}$$

$$1760 \text{ yd.} = 1 \text{ mi.}$$

$$5280 \text{ ft.} = 1 \text{ mi.}$$

$$3 \text{ ft.} = 1 \text{ yd.}$$

$$36 \text{ in.} = 1 \text{ yd.}$$

## Conversion Examples:

Ex: How many feet in 212 inches?

Fact

$$\frac{12 \text{ in}}{1 \text{ ft.}} = \frac{212 \text{ in.}}{x}$$

$$\frac{12x}{12} = \frac{212}{12}$$

$$x = 17 \text{ ft. } 8 \text{ in.}$$

OR

$$17 \frac{8}{12} = 17 \frac{2}{3} \text{ ft.}$$

Ex: How many gallons in 82 quarts?

$$\frac{4 \text{ qt.}}{1 \text{ gal}} = \frac{82 \text{ qt.}}{x}$$

$$\frac{4x}{4} = \frac{82}{4}$$

$$x = 20 \text{ gal } 2 \text{ qt.}$$

OR

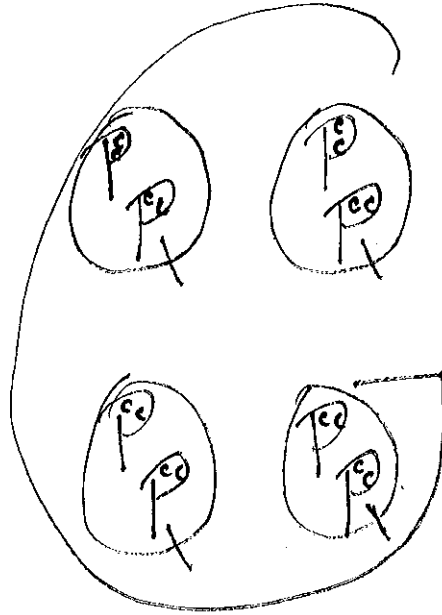
$$20 \frac{2}{4} = 20 \frac{1}{2} \text{ gal.}$$

Weight:

$$16 \text{ oz} = 1 \text{ lb}$$

$$2000 \text{ lb} = 1 \text{ T.}$$

Capacity:



$$4 \text{ qt.} = 1 \text{ gal.}$$

$$2 \text{ c.} = 1 \text{ pt.}$$

$$16 \text{ c} = 1 \text{ gal.}$$

$$8 \text{ pt.} = 1 \text{ gal.}$$

$$8 \text{ c} = 2 \text{ qt.}$$

$$2 \text{ pt.} = 1 \text{ qt.}$$

$$4 \text{ c.} = 1 \text{ qt.}$$

$$3 \text{ tsp.} = 1 \text{ T.}$$

$$8 \text{ fl. oz} = 1 \text{ c.}$$

Ex: How many pounds in  $2\frac{1}{2}$  tons?

$$\frac{2000 \text{ lb}}{1 \text{ T}} = \frac{x}{2\frac{1}{2} \text{ T.}}$$

$$5000 = x$$

$$5000 \text{ lb}$$